

[illegible]

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LL          IIIIII          SSSSSSSS
LL          IIIIII          SSSSSSSS
LL          II             SS
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LL          II             SSSSSS
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LL          II             SS
LLLLLLLLLLLL IIIIII          SSSSSSSS
LLLLLLLLLLLL IIIIII          SSSSSSSS

```

(2)

56

'SET\$VALIDATE_QUORUM'


```
0000 1 .TITLE SETCLUSUB
0000 2 .IDENT /V04-000/
0000 3 *****
0000 4 *
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0000 22 *
0000 23 *
0000 24 *****
0000 25
0000 26 ++
0000 27
0000 28 FACILITY: SET CLUSTER
0000 29
0000 30 ABSTRACT: Subroutines which run at elevated IPL for SET CLUSTER
0000 31
0000 32 AUTHOR: Paul R. Beck
0000 33
0000 34 DATE: 19-FEB-1984
0000 35
0000 36 REVISION HISTORY:
0000 37
0000 38 V03-001 DWT0205 David W. Thiel 26-Mar-1984
0000 39 Revise interface to connection manager.
0000 40
0000 41 --
0000 42
0000 43 Define offsets and constants
0000 44
0000 45 $IPLDEF
0000 46 $CLUBDEF
0000 47 $CSBDEF
0000 48 $SBDEF
0000 49
00000000 50 .PSECT SET$CODE BYTE, RD, NOWRT, EXE
0000 51
0000 52 Define timer for 1/10 second
0000 53
0000 54 ONE_TENTH: .LONG -1*1000*1000*1, -1
FFFFFFFF FFF0BDC0 0000
```

'SET\$VALIDATE_QUORUM'

```
0008 56 .SBTTL 'SET$VALIDATE_QUORUM'
0008 57 :++
0008 58 :      SET$VALIDATE_QUORUM
0008 59 :
0008 60 :      FUNCTIONAL DESCRIPTION:
0008 61 :          Validate proposed value for quorum to ensure that it is neither
0008 62 :          too high nor too low, and pin it accordingly if it is out of range.
0008 63 :          Pass the validated quorum value to the connection manager for
0008 64 :          setting in the cluster.
0008 65 :      CALLING SEQUENCE:
0008 66 :          CALL SET$VALIDATE_QUORUM ( quorum, new_quorum )
0008 67 :      INPUT PARAMETERS:
0008 68 :          P1      = new quorum value, or 0
0008 69 :                  If 0, set according to (V+2)/2 formula.
0008 70 :      IMPLICIT INPUTS:
0008 71 :          V      = CLUB$W_VOTES, total number of cluster votes
0008 72 :      OUTPUT PARAMETERS:
0008 73 :          new_quorum = address of longword to receive actual value set
0008 74 :      IMPLICIT OUTPUTS:
0008 75 :          none
0008 76 :      COMPLETION CODES:
0008 77 :          SSS NORMAL      = quorum set
0008 78 :      SIDE EFFECTS:
0008 79 :
0008 80 :      --
000C 0008 81 :
0008 82 :      .ENTRY SET$VALIDATE_QUORUM, ^M<R2,R3>
000A 83 :
000A 84 :      This work must be done in kernel mode, and synchronized with the
000A 85 :      connection manager.
000A 86 :
53 50 D0 000A 87 5$:      $CMKRNL_S B^CHANGE_QUORUM,(AP) ; Do this in kernel mode
0016 88      MOVL      R0,R3 ; Save status of request
0019 89 :
0019 90 :      At this point, we wait in user mode for a short time, then test to see
0019 91 :      if the connection manager has completed its work.
0019 92 :
0019 93 10$:      $SETIMR_S -
0019 94 :          efn      = #EXESC_SYSEFN - ; Define a tick
0019 95 :          daytim    = B^ONE_TENTH ; ...use system event flag
0019 96 :          ; ...shouldn't be perceptible
27 50 E9 002B 96      BLBC      R0,15$ ; any error will be program bug
002E 97      $WAITFR_S -
002E 98 :          efn      = #EXESC_SYSEFN ; Wait a tick
17 50 E9 003B 99      BLBC      R0,15$
C9 53 E9 003E 100      BLBC      R3,5$
0041 101      $CMKRNL_S B^TEST_QUORUM ; Retry the command (couldn't handle it befo
004D 102      BLBC      R0,10$ ; Test CLUB$V_ADJ_QUORUM
08 BC C9 50 E9 0050 103      BLBC      R0,10$ ; If LBC, not done
52 D0 0054 104      MOVL      R2,R3(AP) ; new_quorum <- assigned value
04 0055 105      RET
0055 106 15$:      PUSHL      R0 ; P1 = condition (assume no FA0 args)
0057 107      CALLS      #1,G^LIB$SIGNAL ; Signal the error.
005E 108      RET ; Done
```


'SET\$VALIDATE_QUORUM'

```
51 04 AC 0000 005F 110 CHANGE_QUORUM:
      DO 005F 111 .WORD 0 ; Entry point
      0061 112 MOVL 4(AP),R1 ; Get P1 = new quorum (value)
      0065 113 SETIPL B^IPL_SYNCH ; Make sure code won't page at SYNCH
      0069 114 :
      0069 115 : Tell the connection manager to set a new quorum. The connection manager
      0069 116 : must handle this since it is done in a coordinated fashion across the
      0069 117 : cluster. The quorum value is passed in R1 to this routine.
      0069 118 :
      0069 119 : Note that the connection manager is responsible for sanity-checking the
      0069 120 : quorum value.
      0069 121 :
00000000'GF 16 0069 122 JSB G^CNX$CHANGE_QUORUM ; Set new quorum value
      006F 123 :
      006F 124 : Done with the synchronized part. Return status in R0 to user mode.
      006F 125 :
      006F 126 SETIPL #0 ; Out of synch
      04 0072 127 RET ; Back to user mode
```

'SET\$VALIDATE_QUORUM'

```
0073 129 :  
0073 130 : Subroutine to return new quorum in R2, or error if not yet set.  
0073 131 :  
0073 132 TEST_QUORUM:  
0000 0073 133 .WORD 0  
0075 134  
0075 135 SETIPL B^IPL SYNCH ; Lock down page, synch with cnx mgr  
52 00000000'GF D0 0079 136 MOVL G^CLUSGL CLUB,R2 ; Get CLUB structure  
50 D4 0080 137 CLRL R0 ; Assume new quorum not set yet.  
1B E0 0082 138 BBS #CLUB$V_ADJ QUORUM,- ; If BS, still in process of setting quorum  
1C A2 0084 139 CLUB$L_FLAGS(R2),-  
07 0086 140 10$  
52 20 A2 3C 0087 141 MOVZWL CLUB$W_QUORUM(R2),R2 ; Done...get new quorum.  
50 01 D0 0088 142 MOVL #1,R0 ; Flag success  
008E 143 10$: SETIPL #0 ; Desynchronize  
04 0091 144 RET ; Done  
0092 145  
0092 146 IPL_SYNCH:  
00000008 0092 147 .LONG IPL$ SYNCH ; End of locked-down portion
```

SETCLUSUB
V04-000

'SET\$VALIDATE_QUORUM'

0096 149 .END

L 9

15-SEP-1984 23:42:14 VAX/VMS Macro V04-00
4-SEP-1984 23:18:34 [CLIUTL.SRC]SETCLUSUB.MAR;1 Page 5
(5)

SETCLUSUB
Symbol table

M 9

15-SEP-1984 23:42:14 VAX/VMS Macro V04-00 Page 6
4-SEP-1984 23:18:34 [CLIUTL.SRC]SETCLUSUB.MAR;1 (5)

```

$ST1          = 00000000
CHANGE_QUORUM 0000005F R    02
CLUSGL-CLUB    ***** X    02
CLUSGL-FLAGS   = 0000001C
CLUSV-ADJ_QUORUM = 0000001B
CLUSW-QUORUM   = 00000020
CNX$CHANGE_QUORUM ***** X    02
EXESC_SYSEFN   ***** X    02
IPL$ SYNCH     = 00000008
IPL SYNCH      00000092 R    02
LIB$SIGNAL     ***** X    02
ONE_TENTH      00000000 R    02
PR$ IPL        ***** X    02
SET$VALIDATE_QUORUM 00000008 RG   02
SYSSCMKRNL     ***** GX   02
SYSSSETIMR     ***** GX   02
SYSSWAITFR     ***** GX   02
TEST_QUORUM    00000073 R    02

```

+-----+
! Psect synopsis !
+-----+

PSECT name	Allocation	PSECT No.	Attributes
. ABS .	00000000 (0.)	00 (0.)	NOPIC USR CON ABS LCL NOSHR NOEXE NORD NOWRT NOVEC BYTE
\$ABSS	00000000 (0.)	01 (1.)	NOPIC USR CON ABS LCL NOSHR EXE RD WRT NOVEC BYTE
SET\$CODE	00000096 (150.)	02 (2.)	NOPIC USR CON REL LCL NOSHR EXE RD NOWRT NOVEC BYTE

+-----+
! Performance indicators !
+-----+

Phase	Page faults	CPU Time	Elapsed Time
Initialization	10	00:00:00.09	00:00:01.75
Command processing	82	00:00:00.96	00:00:04.82
Pass 1	181	00:00:03.55	00:00:19.60
Symbol table sort	0	00:00:00.40	00:00:00.72
Pass 2	53	00:00:00.68	00:00:03.33
Symbol table output	4	00:00:00.03	00:00:00.34
Psect synopsis output	1	00:00:00.03	00:00:00.52
Cross-reference output	0	00:00:00.00	00:00:00.00
Assembler run totals	333	00:00:05.74	00:00:31.08

The working set limit was 900 pages.
17041 bytes (34 pages) of virtual memory were used to buffer the intermediate code.
There were 20 pages of symbol table space allocated to hold 297 non-local and 4 local symbols.
149 source lines were read in Pass 1, producing 16 object records in Pass 2.
18 pages of virtual memory were used to define 17 macros.

+-----+
! Macro library statistics !
+-----+

Macro library name

Macros defined

\$255\$DUA28:[CLIUTL.OBJ]CLIUTL.MLB;1
\$255\$DUA28:[SYS.OBJ]LIB.MLB;1
\$255\$DUA28:[SYSLIB]STARLET.MLB;2
TOTALS (all libraries)

0
5
9
14

413 GETS were required to define 14 macros.

There were no errors, warnings or information messages.

MACRO/LIS=LIS\$:SETCLUSUB/OBJ=OBJ\$:SETCLUSUB MSRC\$:SETCLUSUB/UPDATE=(ENH\$:SETCLUSUB)+EXECMLS/LIB+LIB\$:CLIUTL/LIB

0052 AH-BT13A-SE
VAX/VMS V4.0

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